The role of interleukin-6 in the pathogenesis of proliferative diabetic retinopathy (PDR)

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Purpose:
To elucidate the possible role of interleukin-6 (IL-6), a proinflammatory cytokine in the pathogenesis of proliferative diabetic retinopathy (PDR).

Methods:
Together with pertinent clinical and laboratory data, intravitreal and serum concentrations of IL-6 have been determined in eight patients with PDR employing ELISA method and the results have been compared to those from eight control subjects who harbored ocular diseases not associated with retinal neovascularization, requiring vitrectomy.

Results:
Statistical analysis has revealed significantly higher intravitreal IL-6 concentrations in patients with PDR when compared to their own serum and to the intravitreal concentrations of the control subjects. The serum IL-6 levels in the PDR group were lower than the measurable threshold of the ELISA kit. Diabetic patients with macular edema had higher mean intravitreal IL-6 level when compared to the mean level of those without macular edema. Correlation analysis did not reveal any significant association between intravitreal IL-6 levels and patient age, duration of diabetes mellitus or VH, panretinal photocoagulation, type of current medical therapy, hyperglycemia or the biochemical indicators of renal function.

Conclusion:
High levels of the IL-6 in the vitreus in patients with PDR were attributed to intraocular synthesis. The results of this study implicate the role of IL-6 in the pathogenesis of neovascularisation and edema in DR, however the levels did not reveal correlation with any of the clinical or metabolic parameters investigated to a significant degree.

Take-home message:
IL-6, a proinflammatory cytokine, production in the eye may play a significant role in the pathogenesis of proliferative diabetic retinopathy.